



IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): The misalignment detector according to claim [[1]] 6, wherein the light synthesizing unit includes a prism.

Claims 3-4 (Canceled).

Claim 5 (Currently Amended): The misalignment detector according to claim [[1]] 6, wherein the image sensor and the light source are mounted on a same circuit board.

Claim 6 (Currently Amended): ~~The misalignment detector according to claim 3,~~
comprising: A misalignment detector in an image forming apparatus in which a latent image is formed on an image carrier by using a plurality of laser beams, the misalignment detector detects a position-shift of each laser beam, comprising:
a two-dimensional image sensor configured to read a position detection pattern that is formed on an image carrier;
a light source that outputs light;
a synthesizing unit configured to refract input light from the light source and to pass the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected from the position detection pattern; and
a focusing unit that focuses the light reflected from the synthesizing unit on the image sensor;

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit,

wherein the position detection pattern includes a plurality of lines that are parallel to each other.

Claim 7 (Currently Amended): ~~The misalignment detector according to claim 4,~~
~~comprising:~~ A misalignment detector in an image forming apparatus in which a latent image is formed on an image carrier by using a plurality of laser beams, the misalignment detector detects a position-shift of each laser beam, comprising:

a two-dimensional image sensor configured to read a position detection pattern that is formed on an image carrier;

a light source that outputs light;

a synthesizing unit configured to refract input light from the light source and to pass the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected from the position detection pattern; and

a focusing unit that focuses the light reflected from the synthesizing unit on the image sensor;

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit,

wherein the position detection pattern includes dots of a predetermined size.

Claims 8-11 (Canceled).

Claim 12 (Currently Amended): The misalignment detector according to claim [[11]]
16, wherein the light synthesizing unit includes a prism.

Claims 13-14 (Canceled).

Claim 15 (Currently Amended): The misalignment detector according to claim [[11]]
16, wherein the image sensor and the light source are mounted on a same circuit board.

Claim 16 (Currently Amended): ~~The misalignment detector according to claim 13,~~
~~comprising:~~ A misalignment detector in an image forming apparatus in which a latent image
is formed on a photosensitive drum by using a plurality of laser beams, while achieving an
independent image, the misalignment detector detects a position-shift of each laser beam
based on an image formed on an image sensor of a position detection pattern that is formed
on an image carrier, comprising:

a light source that outputs light;

a synthesizing unit that passes the light of the light source and refracts the light so as
to illuminate the position detection pattern, collects a light reflected from the position
detection pattern, and reflects the collected light off a first reflecting surface; and

a focusing unit including a second reflecting surface that focuses the light reflected
from the synthesizing unit on the image sensor,

an adding unit that adds up image data of a two-dimensional image sensor in any one
of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit;

wherein the position detection pattern includes a plurality of lines that are parallel to each other.

Claim 17 (Currently Amended): ~~The misalignment detector according to claim 14, comprising:~~ A misalignment detector in an image forming apparatus in which a latent image is formed on a photosensitive drum by using a plurality of laser beams, while achieving an independent image, the misalignment detector detects a position-shift of each laser beam based on an image formed on an image sensor of a position detection pattern that is formed on an image carrier, comprising:

a light source that outputs light;

a synthesizing unit that passes the light of the light source and refracts the light so as to illuminate the position detection pattern, collects a light reflected from the position detection pattern, and reflects the collected light off a first reflecting surface; and

a focusing unit including a second reflecting surface that focuses the light reflected from the synthesizing unit on the image sensor;

an adding unit that adds up image data of a two-dimensional image sensor in any one of the main scanning direction and the secondary scanning direction; and

a peak-position detector that detects a peak position in one-dimensional data that is output by the adding unit,

wherein the position detection pattern includes dots of a predetermined size.

Claims 18-19 (Canceled).